Boulder Transportation Master Plan

Renewed Vision for Transit: Transit Analysis

Working Draft

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EXECUTIVE SUMMARY

A key component of the 2013 Boulder Transportation Master Plan (TMP) Update is a Renewed Vision for Transit. The vision will be grounded in an extensive, outcome-based analysis of future scenarios for transit system development in Boulder and surrounding communities.

Along with investments in other modes and programs, improved transit services, programs, and enhancements to the transit customer experience will help Boulder reach its target to have 75 percent of all local trips made by non-single occupant modes by the year 2025. As Boulder moves closer to this target, progress is more challenging and requires significant investment and programmatic support. Still, recent data shows that Boulder has been able to achieve a citywide non-SOV mode share of 64 percent for all trips. While a 75 percent non-SOV mode share would be considered unachievable in most U.S. communities, Boulder considers it a realistic goal and further, one that is essential to meet policy objectives that support the local economy, environmental goals, and a high quality of life.

A key step in developing the Renewed Vision for Transit is to develop transit scenarios that provide the opportunity to test various levels and types of capital and operating investment. This process will inform a preferred scenario that will be the framework for the Renewed Vision for Transit. It is important to note that the scenarios themselves are not meant to represent system plans that could be fully implemented. Rather, the scenario evaluation process helps to:

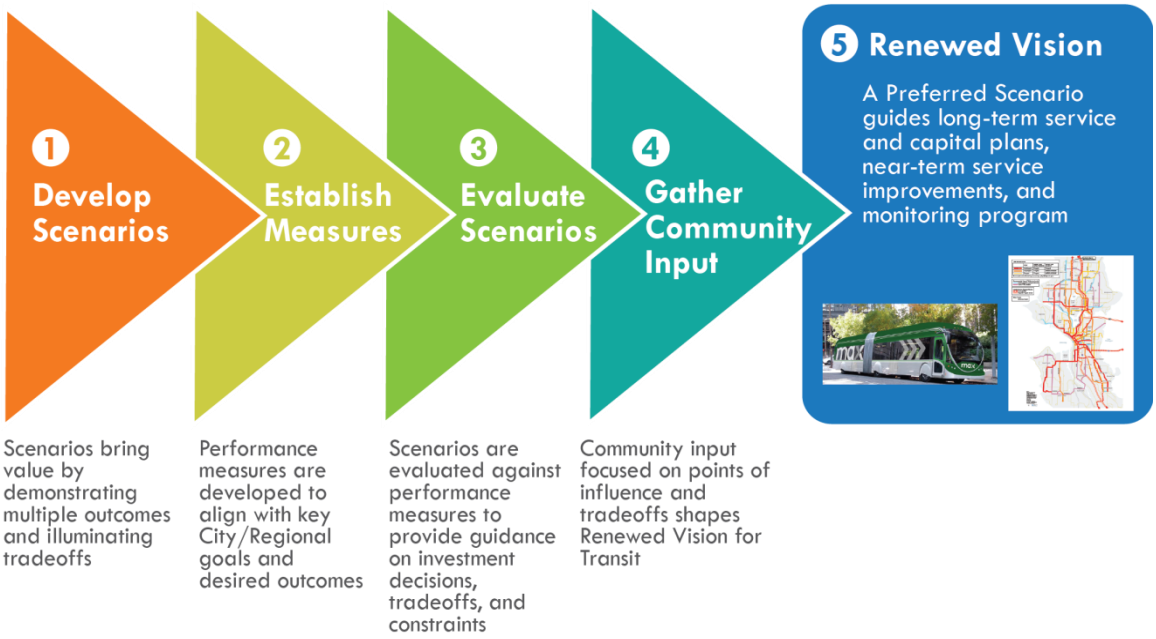
- Illuminate possible futures, not "the" future plan
- Test key constraints
- Test tradeoffs
- Inform decisions

This Transit Analysis Report provides an overview of the transit scenario development process, methodology, and results.

Transit Scenario Development and Evaluation Process

Figure E-1 summarizes the approach to develop and evaluate the transit scenarios and how the scenarios will be used to develop a Renewed Vision for Transit.

Figure E-1 Transit Scenario Evaluation Process



Based on input from the Technical Advisory Committee,[1] the Transportation Advisory Board, City of Boulder staff, and the public, the following four transit scenarios were developed:[2]

- **Baseline:** This scenario represents a "No Net New Service" position based on the assumption that any financial growth is consumed by increases in operating costs and that capital development is limited to currently funded projects such as the US 36 Corridor BRT. The primary intent of this scenario is to act as a point of comparison for Scenarios 1, 2, and 3, which represent varying levels of growth and system investment.
- **Scenario 1: Enhanced Local and Regional Service**. This scenario emphasizes investment in operating resources to develop a CTN level of service on the most productive corridors in the city of Boulder and on regional connections to/from Boulder. Capital investments in transit corridors are limited in this scenario.
- **Scenario 2: Boulder Local CTN Buildout.** This scenario focuses on local Boulder service investment, making the buildout of the CTN network a top priority. CTN service is delivered on all corridors that are believed to have supportive land use attributes in the plan outyear. Corridor capital investments are prioritized on corridors that best support CTN development by providing needed speed and reliability enhancements.
- **Scenario 3: Local and Regional Rapid Transit Network**. This scenario has a more modest level of investment in local and regional transit operations, although it provides a

[1] The Transit Technical Advisory Committee (TAC) convened in January 2013 and is comprised primarily, but not exclusively, of "technical staff" from local and regional policy, agency, and key community stakeholders such as transportation staff from Boulder County, RTD, the Director of the Chamber of Commerce, CU representatives, and local Transportation Management Organizations (TMOs). The TAC is intended to be advisory and to provide input on the transit work and public outreach for the transit element of the TMP update.

[2] Scenario projections are based on 2035 population and employment data.

67% increase over the Baseline scenario. Capital development for Rapid Bus and Enhanced Bus is emphasized in this scenario.

The Boulder Transportation Master Plan (TMP) established a transportation plan that fits within broader community goals to protect the natural environment while enhancing Boulder's quality of life, improving economic vitality, and protecting valued open space and natural areas.

In support of the community's Sustainability Framework and broader Transportation Master Plan goals, four evaluation accounts were developed to evaluate long-term transit plan scenarios and specific proposed evaluation measures. Each account includes the most important evaluation metrics that tie to the community's broader goals to enhance Boulder's quality of life, improve economic vitality, and protect valued open space and natural areas (Figure E-2).

What is the Scenario Evaluation Process?

The scenario evaluation process is an iterative process that provides the opportunity to test various levels and types of investment. The analysis results answer these key tradeoff questions, among others:

- Which scenario results in the most cost effective investment from a ridership standpoint?
- Which scenario has the greatest impact on greenhouse gas reduction?
- Which scenario most effectively captures regional transit riders?
- Which scenario most effectively serves job access and transit dependent riders?

Figure E-2 Transit Scenarios: Evaluation Accounts and Metrics

Transit Scenario Results

As evidenced by the key findings summarized in Figure E-3 and Figure E-4 below, there is no one scenario that performs the "best." Rather, the analysis highlights how local versus regional investments impact key tradeoffs differently. For example, local investment in transit (i.e. Scenario 2) is the most cost effective but does not perform the best from a transit dependent riders and job access standpoint. By comparison, regional investment (Scenario 1) has the greatest impact on reducing greenhouse gas emissions and capturing retained wealth in the local economy.

Figure E-3 Summary of Accounts and Measures

Boulder TMP Update

Accounts and Measures Summary

EFFICIENCY

	SCENARIO 1 Local & Regional Service	SCENARIO 2 Local CTN Buildout	SCENARIO 3 Rapid Transit/BRT
Ridership/Productivity	2nd	BEST	2nd
Travel Time	3rd	2nd	BEST
Cost Effectivness	2nd	BEST	2nd
User Experience	3rd	2nd	BEST

COMMUNITY

	SCENARIO 1 Local & Regional Service	SCENARIO 2 Local CTN Buildout	SCENARIO 3 Rapid Transit/BRT
Transit Accessibility	2nd	3rd	BEST
Transit Mobility	2nd	3rd	BEST
Housing & Transportation Costs	BEST	2nd	BEST
Active Transportation	2nd	BEST	2nd

ECONOMY

	SCENARIO 1 Local & Regional Service	SCENARIO 2 Local CTN Buildout	SCENARIO 3 Rapid Transit/BRT
Neighborhood Accessibility	BEST	BEST	2nd
Access to Jobs	BEST	2nd	BEST
Green Dividend	BEST	3rd	2nd

ENVIRONMENT

	SCENARIO 1 Local & Regional Service	SCENARIO 2 Local CTN Buildout	SCENARIO 3 Rapid Transit/BRT
Change in VMT	BEST	3rd	2nd
Mobile Source Emissions/ GhG Reduction	BEST	3rd	2nd
Net New Operating Cost per kg GhG Reduced	BEST	3rd	2nd

Figure E-4 Transit Scenario Analysis Results Key Findings

Account	Key Findings
Efficiency	▪ Scenario 2 (in-city CTN focused strategy) nets the most new riders at the lowest cost per ride ▪ Reducing travel time attracts regional ridership ▪ Regional investments are least cost effective on a per rider basis but yield other benefits (i.e. travel time, GhG reduction, and other community benefits noted below) ▪ In Scenario 3, Longmont (119) has highest ridership potential of all regional BRT routes, but Arapahoe and South Boulder are also strong ▪ Scenario 1 (local and regional investment) captures the most regional riders (total and net new riders) ▪ The net new operating cost per VMT reduced is also the most cost effective in Scenario 1
Community	▪ Scenarios with higher service investment outside of Boulder (i.e. Scenario 3) do a better job serving low to mid-income residents, jobs, and transit dependent populations ▪ Active transportation outcomes are better for in-city routes due to higher net new ridership and higher rates of walk and bicycle access to transit
Economy	▪ Scenario 2 has highest access to retail and services within Boulder ▪ Scenarios that focus on regional investment (i.e. Scenarios 1 and 3) put CTN/frequent service within walking distance of the most jobs and the most low- to mid-wage jobs ▪ At a corridor level, Rapid Transit on the Diagonal and Arapahoe are among the best performers for GhG reduced and therefore capture the most “retained wealth” (“retained wealth” is derived from VMT reduction)
Environment	▪ Scenario 2 maximizes reduction in GhG and VMT within the City of Boulder, but Scenario 1 (local and regional investment) has highest overall GhG and VMT reduction benefit ▪ Regional investments are a less cost effective way to get people on transit, but trip lengths are longer leading to greater GhG reduction benefits